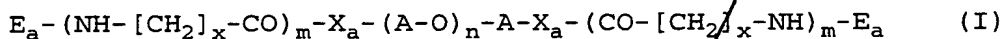


Patent Claims

1. A biaxially stretched and thermoset, tubular, seamless, single-layer or multiple-layer food casing in which the layer or, in the case of multiple-layer casings, at least one of the layers comprises a block copolymer containing "hard" aliphatic polyamide blocks and "soft" aliphatic polyether blocks, which block copolymer corresponds to one of the formulae I to III



where

A is an alkanediyl radical of the formula  
 $-CH_2-CH_2-$  (= ethane-1,2-diyl),

$-CH_2-CH(CH_3)-$  (= propane-1,2-diyl) or

$-(CH_2)_4-$  (= butane-1,4-diyl),

$X_a$  is  $-O-$  or  $-NH-$ ,

$E_a$  is H,  $(C_2-C_8)$ alkanoyl, benzoyl or phenylacetyl,

$CO-N([CH_2]_{x-1}-CH_3)-CO-(C_1-C_4)$ alkyl,

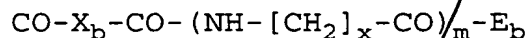
$CO-N([CH_2]_{x-1}-CH_3)-CO-C_6H_5$  or

$CO-N([CH_2]_{x-1}-CH_3)-CO-CH_2-C_6H_5$ ,

x is an integer from 5 to 11,

m is an integer from 30 to 200 and

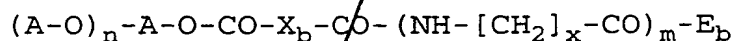
n is an integer from 4 to 60;



|

O

|



where

$X_b$  is an alkanediyl radical of the formula

$-\text{[CH}_2\text{]}_z-$ ,

where  $z$  is an integer from 4 to 10,

*meta*- or *para*-phenylene,

$-\text{NH}-(\text{C}_1-\text{C}_6)\text{alkyl}-\text{NH}-$ ,

$-\text{NH}-\text{C}_6\text{H}_3-(\text{CH}_3)-\text{NH}-$ ,

$>\text{N}-\text{[CH}_2\text{]}_{x-1}-\text{CH}_3$ ,  $-\text{[CH}_2\text{]}_z-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-$  or

$-\text{C}_6\text{H}_4-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-$ ,

where  $\text{C}_6\text{H}_4$  is *meta*- or *para*-phenylene,

$\text{E}_b$  is  $-\text{OH}$ ,  $-\text{O}-(\text{C}_1-\text{C}_7)\text{alkyl}$ ,  $-\text{O}$ -phenyl or  $-\text{N}-\text{C}=\text{O}$

\ /  
 $[\text{CH}_2]_x$

and

$A$ ,  $m$  and  $n$  have the meanings given above;

$-\text{[X}-(\text{CO}-\text{[CH}_2\text{]}_x-\text{NH})_o-\text{Y}-\text{X}-(\text{A}-\text{O})_p-\text{A}]-$  (III)

where

$\text{Y}$  is  $-\text{CO}-$ ,  $-\text{CO}-\text{[CH}_2\text{]}_z-\text{CO}-$  or  $-\text{CO}-\text{C}_6\text{H}_4-\text{CO}-$ ,

where  $\text{C}_6\text{H}_4$  is *meta*- or *para*-phenylene, or is

$-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-\text{CO}-$ ,

$-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-\text{CO}-\text{[CH}_2\text{]}_z-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-$

$\text{CO}-$  or

$-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-\text{CO}-\text{C}_6\text{H}_4-\text{CO}-\text{N}(\text{[CH}_2\text{]}_{x-1}-\text{CH}_3)-$

$\text{CO}-$ ,

where  $\text{C}_6\text{H}_4$  has the meanings specified,

$o$  is an integer from 10 to 150 and

$p$  is an integer from 4 to 100 and

$A$ ,  $x$  and  $z$  have the meanings given above.

2. The food casing as claimed in claim 1, wherein the hard polyamide blocks in the block copolymers of the formulae I to III have a glass transition temperature ( $T_g$ ) of from 20 to 80°C and the soft polyether blocks have a  $T_g$  of from -100 to -20°C.

3. The food casing as claimed in claim 1 ~~or 2~~, wherein the polyamide blocks are polycaprolactam blocks and the polyether blocks are poly(ethylene glycol) or poly(butylene glycol) blocks.
4. The food casing as claimed in claim 1 ~~or 2~~, wherein, in the block copolymers of the formulae I and II, m is from 40 to 100 and n is from 10 to 40 and, in the block copolymers of the formula III, o is from 10 to 60 and p is from 20 to 40.
5. The food casing as claimed in <sup>Claim 1</sup> ~~one or more of claims 1 to 4~~, wherein the layer comprises at least one aliphatic and/or partially aromatic (co-)polyamide, mixed with the remaining constituents.
6. The food casing as claimed in claim 5, wherein the (co-)polyamide is nylon 6, nylon 6/6,6, nylon 6/12, nylon 12 or nylon 6I/6T.
7. The food casing as claimed in claim 5 ~~or 6~~, wherein the proportion of the (co-)polyamide is up to 85% by weight, based on the total weight of the layer.
8. The food casing as claimed in <sup>Claim 1</sup> ~~one or more of claims 1 to 7~~, wherein the layer comprises inorganic or organic pigments.
9. The food casing as claimed in claim 1 ~~or 2~~, which consists of multiple layers and the further layers consist of polyamides or polyolefins.
10. The food casing as claimed in claim 1 ~~or 2~~, which has been stretched by blow-molding and extruded through a heated ring die.

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11. The food casing as claimed in claim 1 ~~or 2~~, which has an area stretching ratio of from about 6 to 10.

ADD C<sup>2</sup>  
ADD D<sup>2</sup> }